

CLAIMS

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

- 5 1. A method of adaptive survey or assessment systems used to collect information related to the development, administration, and analysis of surveys and assessments comprising:
 - a source of survey or assessment response data (e.g., previous survey administrations, pilot sample, expert opinion);
 - a software program capable of adaptive survey or assessment administration via a web
 - 10 browser or computer terminal with the ability to accept survey or assessment related information from a respondent or other external source;
 - the adaptive survey or assessment software containing with a database survey questions relevant to the development, administration, and analysis of surveys and assessments;
 - 15 a Bayesian belief network or other probability-based model containing probability information created by a software program to assist in survey or assessment related decisions;
 - the adaptive survey or assessment software that automatically updates the probability information after each response to predict the user's opinion about possible courses of
 - 20 action related to the development, administration, and analysis of surveys and assessments;
 - the adaptive survey or assessment software that uses responses to previous questions to automatically determine the most informative question to ask next;

the adaptive survey or assessment software that continues adaptively administering questions until a predetermined probability-based confidence level has been reached;
the adaptive survey or assessment software that is capable of reporting to the user or sponsoring organization the most probable responses of survey questions for which they did not respond;

the adaptive survey or assessment software that is capable of reporting to the user or sponsoring organization the most probable course(s) of action related to the development, administration, and analysis of surveys and assessments.

2. The method of claim 1 further comprising the steps of:

first step of determining the relationship among survey questions and their underlying constructs using either previously collected data or a small pilot administration;
second step of using the relationships calculated in first step to create a probability distribution contained in a Bayesian belief network or other probability-based model;
third step of running a simulation using adaptive branching structure for controlling the administration of questions to each user to determine the applicability of adaptive administration;
optional fourth step of incorporating the user data back into the probability model to improve accuracy of probability estimates.

3. The method of claim 2 further comprising:

the probability-based information is related to survey or assessment related classification.

4. The method of claims 1, 2, or 3 further comprising:

the method of adaptive survey or assessment systems is used to collect information is

related to product development and/or its introduction into one or more markets comprising:

a source of product development information (e.g., customers, competitors, market research, employees, vendors, resellers);

5 where the adaptive survey or assessment software contains a database survey questions relevant to product development and/or its introduction into one or more markets;

 the Bayesian belief network or other probability-based model containing probability information created by a software program to assist in product
10 development and market decisions;

 the adaptive survey or assessment software automatically updates the probability information after each response to predict the survey user's opinion about possible courses of action related to product development and/or its introduction into one or more markets;

15 the adaptive survey or assessment software is capable of reporting back to the user or sponsoring organization the most probable course(s) of action related to product development and/or its introduction into one or more markets
 the probability-based information is related to product development and market classification.

20 5. The method of claims 1, 2, or 3 further comprising:

 the method of adaptive survey or assessment systems is used to collect information related to customer interests, values, preferences, and intentions comprising:

 a source of customer-related information (e.g., customers, industry analysts,

vendors, employees, resellers);

the software program capable of adaptive survey or assessment administration with the ability to accept customer satisfaction or other customer-related information from a user or other external source via a web browser or computer terminal;

the adaptive survey or assessment software containing with a database survey questions relevant to customer interests, values, preferences, and intentions; the Bayesian belief network or other probability-based model containing probability information created by a software program to assist in customer satisfaction or other customer-related decisions;

the adaptive survey or assessment software that automatically updates the probability information after each response to predict the survey user's opinion about possible courses of action related to customer interests, values, preferences, and intentions;

the adaptive survey or assessment software that is capable of reporting back to the user or sponsoring organization the most probable course(s) of action related to customer interests, values, preferences, and intentions; the probability-based information is related to customer satisfaction or other customer-related classification.

6. The method of claims 1, 2, or 3 further comprising:

the method of adaptive survey or assessment systems used to collect information related to diagnosing or treating medical illness or pathology comprising:

a source of patient symptom and medical history information (e.g., nurse,

physician, patient, relative);

the software program capable of adaptive survey or assessment administration

with the ability to accept medical diagnostic or treatment related information

from a user or other external source via a web browser or computer terminal;

5 the adaptive survey or assessment software containing with a database survey

questions relevant to diagnosing or treating medical illness or pathology;

the Bayesian belief network or other probability-based model containing

probability information created by a software program to assist in medical

diagnostic or treatment related decisions;

10 the adaptive survey or assessment software that automatically updates the

probability information after each response to predict the survey user's opinion

about possible courses of action related to diagnosing or treating medical

illness or pathology;

the adaptive survey or assessment software that is capable of reporting back to

15 the user or sponsoring organization the most probable course(s) of action

related to diagnosing or treating medical illness or pathology;

the probability-based information is related to medical diagnostic or treatment

related classification.

8. The method of claims 1, 2, or 3 further comprising:

20 the method of adaptive survey or assessment systems used to collect information

related to career exploration and/or vocational guidance comprising:

a source of career counseling or vocational information (e.g., school or

vocational counselors, occupational therapists, students, teachers, parents);

the software program capable of adaptive survey or assessment administration with the ability to accept career or vocational related information from a user or other external source via a web browser or computer terminal;

the adaptive survey or assessment software containing with a database survey questions relevant to career exploration and/or vocational guidance;

the Bayesian belief network or other probability-based model containing probability information created by a software program to assist in career or vocational related decisions;

the adaptive survey or assessment software that automatically updates the probability information after each response to predict the survey user's opinion about possible courses of action related to career exploration and/or vocational guidance;

the adaptive survey or assessment software that is capable of reporting to the user the most probable course(s) of action related to career exploration and/or vocational guidance;

the probability-based information is related to career or vocational related classification.

9. The method of claims 1, 2, or 3 further comprising:

the method of adaptive survey or assessment systems used to collect information related to census collection and polling surveys of public opinion comprising:

a source of census data and public opinion, interest, value, or intention information;

the software program capable of adaptive survey or assessment administration

with the ability to accept census and public opinion related information from a user or other external source via a web browser or computer terminal;

the adaptive survey or assessment software containing with a database survey questions relevant to census collection and polling surveys of public opinion;

5 the Bayesian belief network or other probability-based model containing probability information created by a software program to assist in census and public opinion related decisions;

the adaptive survey or assessment software that automatically updates the probability information after each response to predict the survey user's opinion
10 about possible courses of action related to census collection and polling surveys of public opinion;

the adaptive survey or assessment software that is capable of reporting back to the user or sponsoring organization the most probable course(s) of action related to census collection and polling surveys of public opinion;

15 the probability-based information is related to census and public opinion related classification.

10. The method of claims 1, 2, or 3 further comprising:

the method of adaptive survey or assessment systems used to collect information related to systems that assist in troubleshooting solving technical and complex issues
20 comprising:

a source of information on the symptoms and circumstances surrounding technical problems;

the software program capable of adaptive survey or assessment administration

with the ability to accept technical support related information from a user or other external source via a web browser or computer terminal;

the adaptive survey or assessment software containing with a database survey questions relevant to systems that assist in troubleshooting solving technical and complex issues;

the Bayesian belief network or other probability-based model containing probability information created by a software program to assist in technical support related decisions;

the adaptive survey or assessment software that automatically updates the probability information after each response to predict the survey user's opinion about possible courses of action related to systems that assist in troubleshooting solving technical and complex issues;

the adaptive survey or assessment software that is capable of reporting back to the user or sponsoring organization the most probable course(s) of action related to systems that assist in troubleshooting solving technical and complex issues;

the probability-based information is related to technical support related classification.

11. The method of claims 1, 2, or 3 further comprising:

the method of adaptive survey or assessment systems used to collect information related to employee attitudes, interests, preferences, and opinions comprising:

a source of information on worker attitudes and opinions (e.g., employees, supervisors, subordinates, peers, consultants);

the software program capable of adaptive survey or assessment administration with the ability to accept employee feedback related information from a user or other external source via a web browser or computer terminal;

the adaptive survey or assessment software containing with a database survey questions relevant to employee attitudes, interests, preferences, and opinions; the Bayesian belief network or other probability-based model containing probability information created by a software program to assist in employee feedback related decisions;

the adaptive survey or assessment software that automatically updates the probability information after each response to predict the survey user's opinion about possible courses of action related to employee attitudes, interests, preferences, and opinions;

the adaptive survey or assessment software that is capable of reporting back to the user or sponsoring organization the most probable course(s) of action related to employee attitudes, interests, preferences, and opinions; the probability-based information is related to employee feedback related classification.

12. The method of claims 1, 2, or 3 further comprising:

the method of adaptive survey or assessment systems used to collect information related to the description or prediction of market performance and conditions comprising:

a source of market-specific data (e.g., analysts, previous market research, indices, organizations);

the adaptive survey or assessment software containing with a database survey questions relevant to the description or prediction of market performance and conditions;

the Bayesian belief network or other probability-based model containing probability information created by a software program to assist in market research related decisions;

the adaptive survey or assessment software that automatically updates the probability information after each response to predict the survey user's opinion about possible courses of action related to the description or prediction of market performance and conditions;

the adaptive survey or assessment software that is capable of reporting back to the user or sponsoring organization the most probable course(s) of action related to the description or prediction of market performance and conditions;

the probability-based information is related to market research related classification.

13. The method of claims 1, 2, or 3 further comprising:

the method of adaptive survey or assessment systems used to collect information related to the assessment and quantification of an individual's skill set comprising:

a source of information of the individual's skill set (e.g., self-report, supervisors, peers, performance tests);

the adaptive survey or assessment software containing with a database survey questions relevant to the assessment and quantification of an individual's skill set;

the Bayesian belief network or other probability-based model containing probability information created by a software program to assist in skills assessment related decisions;

the adaptive survey or assessment software that automatically updates the probability information after each response to predict the survey user's opinion about possible courses of action related to the assessment and quantification of an individual's skill set;

the adaptive survey or assessment software that is capable of reporting back to the user or sponsoring organization the most probable course(s) of action related to the assessment and quantification of an individual's skill set;

the probability-based information is related to skills assessment related classification.

14. The method of claims 1, 2, or 3 further comprising:

the method of adaptive survey or assessment systems used to collect information related to the evaluation of educational instructors, courses, and institutions comprising:

a source of information related to the effectiveness of educational initiatives (e.g., students, parents, teachers, administrators);

the adaptive survey or assessment software containing with a database survey questions relevant to the evaluation of educational instructors, courses, and institutions;

the Bayesian belief network or other probability-based model containing probability information created by a software program to assist in educational

assessment related decisions;

the adaptive survey or assessment software that automatically updates the probability information after each response to predict the survey user's opinion about possible courses of action related to the evaluation of educational instructors, courses, and institutions;

the adaptive survey or assessment software that is capable of reporting back to the user or sponsoring organization the most probable course(s) of action related to the evaluation of educational instructors, courses, and institutions;

the probability-based information is related to educational assessment related classification.